Excerpt of Implementation Actions regarding on-site systems taken from final draft of Long Island Sound Comprehensive Conservation & Management Plan

Implementation Action: WW-11

Develop improved policies for packaged/decentralized wastewater treatment facilities and on-site septic systems.

Theme: Clean Waters and Healthy Watersheds
Goal: 1: Attain water quality objectives by reducing contaminant and nutrient loads from the land and the waters impacting Long Island Sound.
Outcome: 1-1: Contaminant and nutrient loads from land-based sources in the watershed of Long Island Sound are reduced.
Objective: 1-1a: To reduce contaminant and nutrient loads from point and nonpoint sources.
Strategy: 1-1a9: Improve and manage decentralized, package, and on-site wastewater treatment systems (OSWTSs) to reduce contaminant and nutrient loading.

Project Description/Background This action will examine, prepare and undertake a strategy and plan to provide advocacy to support the Connecticut Department of Health, Suffolk County and New York Departments of Health in acquiring resources to develop state and county regulations, policies and programs to implement use of nutrient reducing practices and on-site – decentralized wastewater systems for domestic/residential wastewater to restore and protect waters affecting coastal water bodies and habitats. Upon potential funding and resources, this action will plan and provide training and resources to health and watershed management organizations, septic system inspectors and planning agencies for developing improved policies and implementing best available nutrient and microbial reducing technologies for decentralized treatment plants and on-site sewage systems, including, for example, upgrades consistent with Suffolk County Department of Health Services (SCDHS) 2014 Comprehensive Water Resources Management Plan. Utilizing existing EPA guidance documents the two state Health agencies will oversee and implement regulations for decentralized treatment plants and on-site septic systems. LISS urges Connecticut and New York to identify nutrient contaminated, threatened and sensitive resources needing innovative and alternative technologies and to implement the management components of the EPA's **'***Voluntary National Guidelines for Management of Onsite and Clustered (Decentralized) Wastewater Treatment Systems'* **(2003**) and encourages the two state Health agencies to discuss nutrient removal systems. This action also further encourages development, implementation, and/or enforcement of local laws and ordinances that promote and/or govern comprehensive management of on-site and decentralized wastewater treatment systems.

Cooperators and Partners The state, county and municipal agencies of Connecticut and New York. A contract/research study may be necessary to facilitate and support regulatory and policy development.

Funding Sources A combination of state and federal grants and loans primarily funded through each states' respective SRF loan and grant programs and through EPA Grants. Possible LISFF, other local grants or private funds could be used for studies or pilot projects.

Level of Funds Needed $$$

Expected Outputs

- Strategy/Plan to advocate for state and county resources to support and develop necessary regulations and policies. Improved and adopted regulations and policies requiring current advanced nutrient reducing package and on-site (innovative and alternative) septic systems in both states.

Performance Metric(s) Recorded number of state municipalities incorporating special sewer districts to facilitate implementation of packaged/decentralized plants. Adopted state and county regulations.

Implementation Status New

Expected Timeframe 2-3 years to solicit and implement study. Broad scale implementation in 2020-2030 time range

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Implementation Action: WW-12

Improve understanding, management, and design of denitrifying on-site wastewater treatment systems (OSWTSs) to reduce nitrogen and pathogens.

Theme: Clean Waters and Healthy Watersheds
Goal: 1: Attain water quality objectives by reducing contaminant and nutrient loads from the land and the waters impacting Long Island Sound.
Outcome: 1-1: Contaminant and nutrient loads from land-based sources in the watershed of Long Island Sound are reduced.
Objective: 1-1a: To reduce contaminant and nutrient loads from point and nonpoint sources.
Strategy: 1-1a9: Improve and manage decentralized, package, and on-site wastewater treatment systems (OSWTSs) to reduce contaminant and nutrient loading.

Project Description/Background Substantial effort has been invested in increasing WWTF infrastructure to remove nitrogen, and the limit of nitrogen-removal technology may have been reached. More attention needs to be paid to other sources of nitrogen, and of these, sewage nitrogen from unsewered areas, particularly those near the coast, is among the largest remaining contributors. Approximately half of the homes and businesses in the watershed have OSWTS (http://longislandsoundstudy.net/wp-content/uploads/2010/03/fact13.pdf). The technology exists to remove significant amounts of N from these sources, but it is still expensive, rarely required by law, and in some cases, still under development.
This action will focus on *developing an understanding and guidance on how best to utilize these systems, when to require their implementation, and how much of an impact they can have on the nutrient budget of Long Island Sound.*

Cooperators and Partners Research would likely be conducted by academic or consulting agency partners. New OSWTS regulations at the state level are needed (see WW-11) to improve oversight and guidance on applying and permitting nutrient reducing technologies. Planning and zoning implementation by regional planning agencies and municipalities. LISS will assist with logistics, outreach and possibly some funding.

Funding Sources Planning grants could target LISFF. Implementation would require external sources of funding or state/municipal budgets.

Level of Funds Needed Feasibility study $$$ Implementation $$$$
Upgrading to a nitrogen removing septic system costs $20-50K depending on size, which would require external funding for subsidized loan programs etc.

Expected Outputs

- Planning/research reports on nitrogen removing OSWTS.
- Improvement in OSWTS nitrogen removal.
- Eventual N load reductions resulting from implementation

Performance Metric(s) Number of nitrogen removing septic systems installed after action implementation.

Implementation Status Underway/New
Efforts to understand the impact of OSWTS are underway in New York and Connecticut. A comprehensive study and implementation of new measures will follow.

Expected Timeframe Ongoing. Feasibility study – two years. Legislation and implementation of new technology over the next 20 or so years.

Comment [AR1]: Stray words – delete ?

Comment [AR2]: Are these studies for quantifying the impact of current septic systems on coastal waters/habitats? This could be used to advocate for needed resources for CTDOH to prepare and adopt regulations to approve and apply I/A nutrient reducing residential systems.

Comment [AR3]: This could be useful to CTDOH to get supporting resources they need to develop regulation to use onsite I/A nitrogen reducing systems.

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Implementation Action: WW-13

Improve efficiency and resiliency of existing/new waste treatment systems including septic, WWTF and stormwater infrastructure to accommodate sea level rise.

Theme:	Clean Waters and Healthy Watersheds
Goal:	1: Attain water quality objectives by reducing contaminant and nutrient loads from the land and the waters impacting Long Island Sound.
Outcome:	1-1: Contaminant and nutrient loads from land-based sources in the watershed of Long Island Sound are reduced.
Objective:	1-1a: To reduce contaminant and nutrient loads from point and nonpoint sources.
Strategy:	1-1a10: Incorporate climate change and sea level rise in planning, regulation, and BMPs for stormwater and wastewater treatment to control contaminant and nutrient loads.

Project Description/Background State agencies will work with municipalities to improve and protect wastewater treatment plants and storm sewer infrastructure operations and efficiencies from the impacts of flood waters due to increased precipitation events and rising sea levels as a result of climate change. To minimize and prevent flood induced discharges of untreated or partially treated sewage containing excess nutrients and pollutants. A comprehensive study will be conducted to identify where improvements are necessary and the costs associated with those improvements. This would be followed by assistance to municipalities in applying for funding for projects to upgrade infrastructure for nonpoint source pollution control equipment and facilities.

Wastewater treatment infrastructure located within coastal flood zones will also be at risk to flooding and potential operation failure. This action will advocate for funding and resources for the State Health agencies to undertake and provide training and resources to shoreline municipalities and planning agencies for developing and implementing coastal adaptation and resiliency strategies for decentralized treatment plants and on-site sewage systems located within the coastal flood zones of the Long Island Sound municipalities. This also includes implementing strategies to deal with groundwater depth changes as a result of climate change, and its impacts on septic system use and siting. Upon funding and resources, ~~Utilizing existing EPA guidance documents~~ the two state Health agencies will utilize existing EPA guidance documents to work with the municipalities to oversee and implement regulations for decentralized treatment plants and on-site septic systems.

Comment [AR4]: What EPA guidance and regulations is this referring to?

Cooperators and Partners The state agencies of Connecticut and New York – Suffolk County and Connecticut their DEEP and DOH and its respective state municipalities' health departments CTDOH/NYSDEC (for OSWT systems over 1000gpd).

Funding Sources Initial study could be LISFF funded. Implementation would be a combination of state and federal grants and loans primarily funded through each state's respective SRF loan and grant programs, to seek funding for NPS infrastructure upgrades

Level of Funds Needed $ to $$$S

Expected Outputs Report on changes necessary to incorporate sea level rise (SLR) into existing policies. List of plants and systems that will required upgrades to accommodate SLR.

Comment [AR5]: Edit out "d"

Performance Metric(s) Number of municipalities that incorporate coastal adaptation and resiliency strategies for wastewater treatment infrastructure into their resiliency plans

Implementation Status New

Expected Timeframe Five-year action. (January 2015 – December 2020) Report should take one year

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(outside consultant funding) and should be implemented within 2-3 years. Implementation of report recommendations likely in 2020-2030 timeframe.